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A MOUND OF CACTI
IN MRS. NICKELS' GARDEN

THE SUMMER TREATMENT OF CACTI.

THOSE who are interested in cacti may find some good suggestions for contrasting and displaying the different forms in the engraving of a mound of cacti, grown and photographed by Mrs. Anna B. Nickels, of Laredo, Texas. With the exception of the phyllocacti, some forms of which are as graceful as any plant that grows, all cacti are stiff, prickly, curious things, and a little round cactus planted in a little round pot has very much of a dumb-bell effect. In winter all cacti, except the very hardy ones, must be grown in pots or boxes, but in summer it is pleasant to relieve their stiffness by bedding them out in this picturesque mound fashion. Thus they are more easily cared for, and that the mound is much prettier than the potted group will be shown by contrasting the two pictures.

I have never been afflicted with the cactus craze, and perhaps this is the reason why so many complimentary plants, cuttings, etc., have been sent me. I am always glad to get the prickly things out of the way into some such an outdoor arrangement, and summer treatment of this kind seems to suit the plants well.

The broad-leaved phyllocacti are handsome and harmless enough to keep at closer range, and they do not like the full, hot sun so well as most other sorts; sometimes it blisters, cracks or yellows the leaves.

The secret of success with cacti lies in giving them thorough drainage, plenty of water when flowering or growing, then thoroughly resting and ripening them by withholding all water except what nature gives them, through the flowerless season. More cactus cuttings and plants fail from over-watering and lack of sunshine than for any other reasons. Most cacti are hardier, too, than we think. Unless flowering, they can be left in an unheated room through all except our most severe winters. The opuntias and some of the pretty red-berried echinocacti are entirely hardy without protection out of doors here in Western Carolina.

L. GREENLEE.

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THE AMARYLLIS AND SOME RELATIVES.

FROM the time that, as a child, I stood in wonder before my mother's king lily, I have loved the amaryllis. Not until many years later did I learn that the name of the king lily was *Amaryllis Johnsoni*, and it was after many experiments and repeated failures that I succeeded in the culture of these rich and rare bulbs. I know of no specialty which gives so much satisfaction at so little labor as the amaryllis. I use a very rich compost of well rotted manure, black earth and sand. The large bulbs are set in six-inch pots, and smaller bulbs in four-inch pots.



CURIOUS FORMS OF CACTI

Into the bottom of each pot goes a handful of charcoal, and then the mold. I set the bulbs so that about one-fourth shows above the soil; then I water them and set them in a warm, light place. A good bulb will throw up leaves and flower stalk almost at once; some send up the flower stalk first. As soon as they begin to grow thriftily I set them in the sun and give them plenty of water. New bulbs planted in the spring will bloom about August. After they have bloomed I gradually dry them off and set them in the cellar in the fall, to rest until November. I have found this the great secret,—the resting of the bulbs. When I bring them up I give them sun, plenty of water, and liquid fertilizer once a week. They will bloom twice during the winter for me, the last time about April or May. Then I gradually dry them off until in July they are put under the rose bushes to rest. In the fall they come into the house to bloom, and this year were put into the cellar along in March,—and so on, alternate rest and vigor. I only repot once in two years, but I give them much fertilizing and water when they are growing. Some bulbs will throw up two stalks, each bearing six flowers, and a grander sight cannot be imagined.

The familiar *Johnsoni* is a rich red, with a white stripe. It is a good color, but is small in of size flower and bulb. It is almost universally called King Lily, although it is by no means king of the amaryllis tribe. Its mate is *Amaryllis regina*; it has short, stubby leaves, instead of the long ones of the king, and the flowers are large, pale red with a white center. We call it Queen Lily. The King, because of its richness of color, rather kills the Queen if they stand in bloom side by side. But alone, Queen lily is beautiful.

The *Crinum ornatum* is the real king of amaryllis. It has a big bulb which sets on top of the earth, with short, fleshy leaves and snake-like roots. It will do well in the garden as a summer bulb, but I treat it as a pot bulb. The flowers are borne upon a stout stalk and are very large and numerous. The color is a lovely pink with a broad fiery band of scarlet through each petal. A grander lily can scarcely be imagined. It is the grandeur of lilies which makes them such favorites, and when you add fragrance to them, such as *Crinum Moorei* possesses, you have a wonderful combination. This *crinum* is white with a pink stripe, and very sweet.

It is hard to select a favorite from the amaryllis, but my *A. aulica*, which is a rich deep red, almost black, is of such magnificent size and rich coloring it may well be termed a favorite. The color is seen in no other flower.

The Empress of India is the costliest of all the amaryllis, but it repays its cost. The flowers are enormous, of a deep scarlet, banded with orange. It is a royal plant without question.

Amaryllis formosissima is a rich velvety crimson with a green band through the center, and it gives one a sense of luxuriant pleasure to look upon it.

The pure white, fragrant *amaryllis* is called *Ismene*. Pale beside its more gorgeous relatives of royal coloring, it is nevertheless valued because of its fragrant daintiness.

The *zephyranthes* belong to the *amaryllis* family. I have a large pot filled with a dozen or two bulbs for summer blooming. The red, pink, white, and yellow flowers are very dainty.

Some day I hope to see a clear yellow *amaryllis*. All shades of red and the white we have,—a yellow would be the touch of novelty in this wonderful family.

GEORGINA G. SMITH.

Iowa.

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SEED PODS.

WITH JULY our grand show of rhododendrons, which began in May, draws to a close. The handsomest rhododendrons of the Southern Alleghenies are *R. maximum* and *R. Catawbiense*. The last blooms first, in May; *R. maximum* blooms in June. Earliest of all is pretty little dwarf white *R. punctatum*, which begins to bloom early in May. *R. Lapponicum*, also dwarf, with purple flowers, blooms late in July, along the banks of mountain streams.

A LEGEND to the effect that it takes a lilac seven years to bloom, is current here. A well tended lilac, the writer knows from experience, will bloom in from three to four years after the little shoot is planted.

A COMMON complaint about Hall's honeysuckle is that it "tries to spread all over the ground." It is easy to train a vine of this honeysuckle to a single, neat, clean stem by pulling off the lower shoots up to two or three inches above the ground, and allowing no shoots to trail and take root. A vine trained in this way blooms much better than one left to grow at will.

THE SPRING and winter floods "mulched" my rows of iris most too deep. The *Kämpfers* came bravely through the thick deposit of black mud from the little creek beside which they grew, and the Siberian varieties did not mind it much, but the German varieties were fairly buried in most cases. Moral,—if you wish to flood your *Kämpfers* in order to get larger flowers, be sure that there are *only* *Kämpfers* in the inundated portion.

EXCEEDINGLY bright and pretty in midsummer is our wild butterfly weed, *Asclepias tuberosa*. Its peculiarly formed flowers are borne in great clusters of glowing orange, an orange common only among *rudbeckias*, *hemerocallis* and *calliopsis*. Grown in pots and trained by pinching back the tips of the shoots, it forms a broad, low bush densely set with gay flowers that are well appreciated in winter.

THE *HEMEROCALLIS*, by the way, is an easy plant to naturalize, and very beautiful when grown in broad clumps or borders. To the beauty of the lilies it adds a hardiness and ease of culture that few of them can boast. Like most perennials it likes to remain undisturbed after planting, and in a few years a good root will have spread into a broad, round crown of rich leaves and flowers. *Hemerocallis disticha*, or *fulva*, fl. pl.

is a rich, showy, semi-double form, with deep-colored tawny flowers. *H. Thunbergii* is lighter and very handsome. *H. flava* is the well-known and loved "lemon lily" of old-fashioned gardens, with flowers of purest yellow, opening early in spring.

OUR WILD fire-pinks, *Silene Virginica*, were unusually fine this year. The creek banks fairly blazed with them, some broad clumps bearing forty or more flowers. What a pity they bloom only in spring! They transplant readily to sunny garden borders.

THE OWNER'S name, scratched with a pin on a tiny young watermelon, brands it effectually. The scar grows with the melon until when the latter is ripe it is quite noticeable. These "branded" melons are sometimes devoured at night in the patch by local thieves, but they are never carried away.

THE DARKIES have a legend to the effect that melons can be flavored with any preferred extract by burying a bottle of the latter underneath a growing vine, making a hole through the cork and inserting a cotton string in the bottle, the other end through an incision made in the hollow vine.

IT IS NATURAL for children and young people to like best the gay-flowered, rollicking annuals, but as one's taste matures nothing gives so much pleasure as a fine collection of choice perennials. Do not buy in one season all those you admire most. Make the pleasure of acquirement last a little longer by purchasing a few every year. You can thus care for them better and they will make fine blooming clumps in a shorter time. A cheap way to get a good collection is to purchase the seeds and sow them in September; thus you have a chance of seeing the young plants bloom the next season, in eight or nine months after the seed was sown. If you were to get only one fine plant from a paper of seed it would be a good investment; while, with care, you may get one or two dozen. In the border you might not care to give room to so many plants of one kind, but the surplus can be cultivated under trees.



HEMEROCALLIS DISTICHA, OR FLAVA, FL. PL.

Emerson's line about the "rock-loving columbine" gave me a valuable hint. I had several papers of columbine seed and wanted to naturalize some big clumps of columbines under some grand oaks in our yard; so we raked the black leafmold smooth, piled the stones that the rake brought up in little heaps, adding a larger one here and there, sowed the columbine seed and raked it in. That was a year ago. Last spring the little plants did not make much of a showing, but this year they are blooming and the finest ones are those upon or close by the stones. I suppose the roots love the cool, moist soil under the stones and thrive best there. The prettiest variety of all is our wild *Aquilegia Canadensis*, with crimson and gold flowers. The strongest growing and always the first to bloom of any are the deep purple varieties. They are also very handsome and large flowered. Especially pretty, too, is a pure pale pink variety, about the color of the Daybreak carnation. But the columbines, by crossing and recrossing, have now sported into a great variety of colors, and by raising them from seed an endless number of different forms can be obtained. They are all adapted to the garden border.

L. GREENLEE.

GARDEN NOTES.

THE GOLDDUST or perennial alyssum, *Alyssum saxatile compactum*, is a pretty plant covered today (May 15) with its bright golden bloom. The plant is very hardy and starts the moment the snow is gone. There are many stems from one root, a foot or more high, and the oval leaves are a sort of sage-green. Each stalk bears a broad, branching head of tiny flowers, which at first look seem like little composite flowers,—a microscopic heliopsis or the like, but the golddust is of the mustard family and really has only four petals; a deep division in the middle of each petal makes eight apparently, and thus it seems like a little sunflower. The plant is a mass of yellow from a distance, and is of value for early bloom, hardiness and brightness. The seed grows readily, I suppose, and altogether the perennial alyssum is a good thing to have.

A YEAR or two ago I chanced to chop the heart out of a hyacinth bulb while hoeing the bed in early spring, I think. This year there were twelve stalks of bloom and several offsets that didn't flower, making a mass very different from hyacinths in general. I imagine the loss of its flower spike turned its energies toward the propagation of offsets.

THE TAMARISK, *Tamarix Africana*, has been mentioned by several contributors lately as a fine shrub, perfectly hardy in Iowa, Nebraska, etc. It grows on many sea-shores in England, but is thought not to be native. It is common to all the coasts of the Mediterranean and extends through Asia to Japan. It is a tough, twiggy shrub, growing freely from cuttings and bearing exposure to any amount of wind. This ease of propagation and hardiness may make it of value as a screen for more tender plants in bleak places. It likes saline soil and thus will presumably be at home in the far west. A sweet substance, called mann or manna, falls from the tamarisk in Arabia; the natives gather it and eat all they can find; its origin is not known, it may be due to the attack of some insect. I ordered a tamarisk this spring; it was evidently cellar-wintered, and when I cut back its top the branches seemed so well seasoned that I feared it was already dead. But it soon began to grow and the new twigs are now (May 29th) an inch or two long, a curious looking growth indeed, more like the branchlets of an *Arbor vitæ* or a *lycopodium* than the foliage of an ordinary shrub. Spikes of pink flowers cover the shrub in spring, they say; I never have seen them.

THE BRISTLY LOCUST, or rose acacia, *Robinia hispida*, is a beautiful shrub which I never saw in bloom till this season. The rosy pink flowers are clustered like those of the ordinary locust tree and are very abundant. Its bristles give it a very distinct appearance; a branch the size of a lead pencil will measure an inch through bristles and all. These hairs look sharp enough to prick, but they do not. Every part of the plant, except the petals, is more or less hairy,—the pod, the calyx and the leaves. Now in the last days of May it is in flower, while the yellow locust tree is just thinking of putting out its leaves. The bristly locust grows eight feet high, they say.

MANY PEOPLE have trouble in growing onions from the sets. If you are one of these try the perennial onions. The sets or buttons that form at the top of the stems are ready to plant about August 1st, and are up and will make a large growth before winter. The next season these will grow a crop of sets which may be planted in a new bed, harvesting the old one in the fall for winter use, and so on. The onions are of good quality, but their form is not commended,—they are small and irregular; but they are better than none at all, and green onions can be had in spring long before the ordinary sale sets can be planted. The perennial onion is one of the hardiest of plants; the sets come up wherever they fall and your garden will be full of clumps of onions if you do not root them out.

MY RUDBECKIA Golden Glow kept a few evergreen leaves all winter, and began a new growth the moment the snow was gone. With the first crocuses the mat of foliage was six inches deep; by the time the early tulips were in bloom it was fifteen; today, May 29th, it is thirty-four inches, with twenty-five or thirty flowering stems,—not so bad for a little mailing plant's second season. A mulch of fine manure was put around it late last fall; it has had no other culture.

E. S. GILBERT.

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FLOWERING VINES.

HORTICULTURAL HALL, at Audubon Park, New Orleans, has several magnificent specimens of flowering vines. Despite the wealth of florescence in the Park and over the entire city, which truly is florally blest, these vines, on the interior, do not suffer by the comparison. Horticultural Hall is kept at a temperature to suit the palms, ferns and orchids of tropical nature, and the wonder to a casual observer is that such a diversity of plants, requiring different degrees of temperature, should be made to harmonize under one roof. The fact is,



HEMEROCALLIS THUNBERGII

the climate of New Orleans is so mild that ventilation is admissible, free and almost unrestricted till December, and again after March; even the phenomenal cold of '99 passes away and the air becomes genial. However the managers reason about it, exotic ferns, palms and tropical orchids flourish side by side with a great variety of plants from widely different sources.

On each side of the main entrance to the Hall is a *Solanum Wendlandii*, in profuse bloom. The vine is trained up a pillar, on a cross-beam overhead, and down an opposite pillar, which explains the one vine blooming on both sides of the entrance. The blooms are in masses, up and down the vine, the clusters numbering from sixty to 100 blooms of a dainty lavender-blue tint. The large, fluffy clusters of flowers, each of funnel-shaped, circular corolla, in such unusual numbers, have quite the effect of some of the most profuse orchids in bloom. The solanums are all fine bloomers, but *Wendlandii* excels them all. The blooms are about three inches across.

Solanum Seaforthianum is a lovely climber and has a kind of red seed or diminutive cherry-like fruit that succeeds the flowers and remains long on the vine.

Next of interest is the *Bougainvillea Sanderiana*, or Chinese climbing paper plant. The bracts that surround the real flower have given the plant the name of "paper"; and that of "parchment," to be descriptive, might equally as well be given. The writer had always regarded the plant as a curiosity, but in this instance its beauty is striking. The flowers are small, cream white and insignificant, but the bracts, in three parts, are of a showy crimson-lake color, and the thorny vine and foliage are of the darkest green, shining as if varnished. The blooms are in clusters of from three to five on each stem, which projects two or three inches from the axils of the leaves, and the clusters are generously disposed along the full length of the vine. Planted close to a pillar, the vine has climbed to the top, and both foliage and flowers begin low

down, not leaving any unsightly length of barren vine near the root. The bract is to this flower what the perianth is to the tulip, imparting all its gaiety. As cut flowers few things equal this paper plant. The dry, papery bracts are bright for four or five days, and even when shed are not withered, and the foliage lasts indefinitely.

The *Passiflora* vines are superb, although only *P. princeps* is in bloom. Its very showy scarlet flowers and conspicuous tendrils in and out of the characteristic tender foliage, are too well known to need more than a reference to this particular specimen of a fine species.

MRS. G. T. DRENNAN.

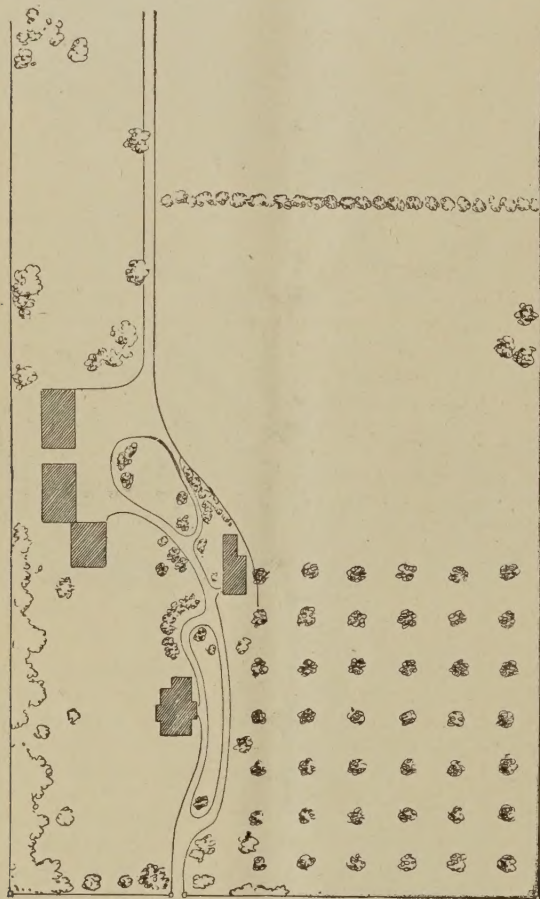
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ORNAMENTAL IMPROVEMENT OF FARMS.

From a farmer in the far west comes this brief note:

Let me suggest that some hints on landscape gardening and tree planting applicable to farms, would, if printed in the *MAGAZINE*, probably be well received by most of your western readers.

Not alone in the west, but in the east and other parts of our country, there has arisen a growing appreciation of ornamental improvements about the farm. There are several reasons for this. One is that all classes of people, farmers included, travel more than formerly. In travelling they meet with many object lessons in landscape gardening, such



PLANTING DESIGN FOR FARM RESIDENCE

as improved city parks, gardens, cemeteries, railroad grounds and the country homes of the wealthier classes. Every one is drawn irresistibly to a beautiful garden. But when the farm owner sees the prime elements that enter into the making of handsome grounds,—namely, land, trees, shrubs and grass,—he observes that all these are within his reach. And he begins to ask why should he not live in a garden.

Then again, the number of people who do business in cities, and who have, or expect to have, a home in the country is very fast increasing. One thing that takes this class to the country is the delights of the landscape elements, trees, shrubs, lawn, etc. Such persons very quickly fall into the way of improving their farm homes ornamentally. Lastly, when it transpires that one person in a neighborhood improves his farm by free and judicious planting, laying out curved drives, and the like, he is sure, sooner or later, to see others following his good example. Thus, in various ways, a tendency is seen towards improving farms ornamentally, and the writer is very glad to contribute his mite towards promoting so excellent a state of things.

In the accompanying figure is shown a simple plan for introducing ornamental features about the country home. The approach to the house and other buildings from the street is by simple driveways, laid

out curving to give them grace, and yet their course is so direct that one does not pass over unnecessary distance in proceeding from point to point. This should always be the aim in making roadways that are to combine both utility and beauty. There is a strong tendency to lay out curves more winding than is necessary. Frequently they are seen laid out in serpentine form, having many bends, a style of driveway that should never be adopted.

Another feature to be recommended in improving farms ornamentally is to have the trees and shrubs distributed over the grounds in a simple manner. This is best accomplished by arranging them in clumps or masses. It is seen in the engraving that these are planted in the main next to the winding margins of the grass plats. The centers of the plats, as a rule, are kept open, affording a viewing ground, of the trees and shrubs as seen in perspective. It need not be said that the parts in the picture to the front, left and back of the house are arranged for ornament, while the orchard appears to the right of the dwelling.

It will be conceded by all that the parts near the highway and about the house are the ones most necessary to keep in handsome trim. Give several acres here close attention and the impression will be conveyed that the more distant parts, which may be seen but are not likely to be traversed, are kept equally well. It would be a great mistake not to have some regard to the distant effect in the planting. Let there be a mass of trees as a terminating point to the lane, whatever its length. If there are one or more knolls in the different fields, surmount each with a clump of trees, say deciduous kinds on one and pines or other evergreens on others. To surround such by wire fencing as a protection against animals is an inexpensive matter.

Judicious improvements of this kind should not be looked upon as a mere source of expense without compensation. Quite the reverse, if entered upon with good taste and discretion. They should enhance the value of the land many fold over the cost of such improvements, to say nothing of the enjoyment of living in a pleasure garden. *

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COMMENTS.

NATURE always manures on the surface," says the April *MAGAZINE*, and here is another pointer as true, as the first: Nature never inverts the soil. To bury vegetable mold is to lose it, partly, at least; to bring up raw subsoil in its place is a calamity from the plant's point of view. Do not imagine your merit increases with the depth of your plowing,—it is right the other way. A plow should never be seen in a garden. Here is a plot of ground containing sixteen rods; it has not been plowed for eight or ten years and never will be again so long as I manage it. Lots of water from higher ground would come upon it were it not for the broad surface drains which surround and divide it, and it occurred to me that it was more work to reform and smooth out these ditches after every plowing than to dig up the ground by hand. So at it I went, doing it this year in less than half a day, going over it with a hoe and stirring the dirt an inch or so deep, and fining the soil as I hoed. The owners—for it is not mine—will polish it off with a rake, sow the seed, and there it is. Last year the sweet corn was enormous, the Hubbard squashes were monsters, tomatoes that could not be used covered the ground, and everything was first-class. I noticed a year or two ago that a rod of cranberry bush beans here yielded more dry beans than ten times as much ground out in the next field.

I had a slight tussle with some twenty rods of ground which bore peas and potatoes last year and where nothing had been done to clear the ground since these ripened last fall. There was grass and clover enough to have made a big crop of hay last July. But I wanted the manure I had drawn in winter to remain on top and the sods also, so I dug away. Had I scuffled it over last fall it would have been a different story this spring. It will be an easy job to keep it clean till the time comes to plant the winter cabbage; just to rattle round among these sods now and then will do it, and there will be a soft, rich surface instead of a beastly lot of stones and clods of subsoil which the plow would bring up. Every farm paper in spring has a diagram of a clod-crusher; I am far ahead of all these inventors, for I have no clods. For you are always getting left, being taken in by a dry-looking surface,—dry enough, in fact, for me to plant, but too wet at the bottom of the furrow for you to plow. "Most too wet," you say, "but I can't wait forever; guess it'll be all right," and soon you are scrubbing around with plank drags, disc harrows, clod crushers, rollers and what not,—your "pulverizing" plow having proved an agglutinating implement. "The dum loomps!" said the old German woman, "I haf pounded dem mit an ax to make a little dirt. The dum loomps." The soil was pulverized ages ago and you can make no improvement on the original job,—all you do is to work up the clods your plow has made. Smooth off your garden, pick up the

stones once for all, leave all manure on the surface, this and other vegetable matter will soon soften the top soil; put most seeds in long drills rather than in little beds, work the soil an inch or so deep often enough to keep it clean and loose and you will see. You need not take my word for it. Then picking out a dry spot you can scratch in some onion seed before the snow has gone from the whole garden perhaps, and so on; putting in an hour or two now and then, your garden is made without trouble. "But we want deep soil!" Very well, the planet is 8,000 miles through, which ought to be deep enough,—and if not, can you have it any deeper? Manure and cultivate the surface and stop worrying about the earth's interior. I have worked it this way for many years and I think I know.

The beautiful picture of the false mitrewort, *Tiareella cordifolia*, in the April MAGAZINE, is a pleasant reminder of a pretty flower native to and very common in this region, in woods and copses, and in meadows and other open fields provided they have never been plowed. Here is a grove of some hundreds of second growth sugar maples and other trees, where I was boiling sap not long ago,—the most pleasant field I have, in my estimation; and the tiarella spikes are here every spring by hundreds or thousands, about a foot high; "coolwort" we used to call it. The flowers are white, and a sort of meal on the main stem and all the pedicels makes them almost as white as the flowers. The individual flowers at a little distance are lost in the feathery look of the spike as a whole; the petals being almost thread-like, the stamens quite so, the white ovary is soon larger than either. The evergreen leaves, rough and hairy, often with a central purple blotch at that time, are conspicuous all winter; if there is no snow, beds of moss or lichen-covered stones covered with them are very attractive. Long, slender runners, often of a fine violet tint, creep beneath the dead leaf carpet, bearing a small leaf or two at the end, or there may be several tufts on a long one and thus new plants are formed.

When Humboldt found the Mexican dahlia it was as an edible root that he thought of it. A few years trial showed that no way of making it eatable could be devised; neither could cattle be induced to eat it. So it was neglected and lost and introduced again before its floral race began.

Grafting, says the April MAGAZINE, should all be completed while the buds are dormant. But if done early and there should be many days of cold, drying wind, as often there is in these parts in spring, such weather is hard on the scions, just as it would be on newly set plants. The nurseryman digs his seedlings and cuts the scions and stores them in cellars. Then in the winter, when nothing can be done in the field, he brings them to the operating table and grafts and packs them away again till spring. But the amateur whose trees are standing out in the field, must have a different program, and the sooner growth begins after the scions are in the better. Some cut scions in March and pack them in an icehouse until the buds are bursting on the stocks, and this is the best way perhaps, all things considered. But I have lately done some grafting of both apples and pears after both scion and stock had started, some of the pear buds having grown half an inch or more. I used a table-knife to split the stock and an old wedge-like iron to open it, sloping the scions and getting them in as quickly as possible. Here is the advantage of not having to face weather for weeks, and the disadvantage that the bark will easily peel from the slope of the scion or the tender buds be broken off in handling. However, I got along very well and

I could see in a day or two that the scions were growing. To put the inner bark of scion and stock exactly in line reads well, and you do not know how hard it is to do until you try it. The bark of the stock is thick, that of the scion is thin; you can hardly see what you are doing and you may wear the scion all out adjusting and readjusting. So lean the upper ends of the scions outward a half inch or so more than shown in the engraving in the April MAGAZINE, being sure the scion's bark is slightly outside the bark of the stock at the top of the slope, and that the thin point is inside it; this you can do the first time you try. Now pull out the wedge,—a dry hickory one will do,—and you have done it. Put on enough wax to insure both stock and scion against air or dampness getting in, bring it down upon the bark of the stock all around, cover the split and put a little on the cut upper end of the scion, and go on to the next.

E. S. GILBERT.

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IMPROVEMENT OF FARM HOMES.

THROUGH the emulation of its occupants, innate love of beauty, or some other motive, the average village or suburban home place eventually comes to take rank with others of its class in neatness of surroundings and general improvement; and the trend is always toward better things; toward unity and completeness and harmonious effect.

Municipal governments are interesting to enforce orderliness, cleanliness, systematic improvement and hygienic thoroughness in exterior care of homes and streets.

We are pre-eminently a house-building and a home-loving people, we Americans,—and gladly hail any movement, public or private, which tends to the improvement of the homes of the people; and yet many details are overlooked or neglected which should receive attention. Especially is this true of our farm places. The buildings may be extensive, architecturally good if not beautiful; the fields brought to a high state of cultivation; products and stock of superior order; while the home grounds wear an air of neglect and inattention.

While there is some excuse for this condition of things, it ought not to be so. Farm homes above all others on earth should be made attractive, for Nature stands a ready handmaiden, quick to second our humblest efforts, and only awaiting to bestow with a lavish hand all her beauties upon us.

The villager turns from his work in store or office to the improvement of his grounds as a relaxation and means of exercise; and the work has for him the charm of variety. To the practical farmer such labors, however delightful, are but the continuation of his work a-field, of which he has had already a superabundance. Small wonder if after twelve hours at plowing or harrowing he declines to spend the remaining hours of daylight in setting out rose bushes. Or after a full day in the harvest field fails to find ardent delight in running a lawn mower.

Your town dweller has the hydrant water to his hand, and it is a small matter to provide hose for the watering of his small plantation; but the matter of improvement of farm grounds were too long delayed if we wait for convenient means to carry on the work; for the farmer must be well-to-do before he can relax to the luxury of a windmill, an elevated tank and the appalling length of hose necessary to the proper care of his more extensive grounds.

Yet if the dwelling, barns, etc., are given a slightly location, the grounds well seeded and not too thickly set with trees, very much of



CHAMÆROPS EXCELSA

beauty is gained at the outset. A good mulching of fine, well rotted manure applied to the lawn each autumn will do much toward keeping the grass in good growing condition, and will also help to withstand the drouths of summer, and the grass can be kept down with a two-horse instead of the hand mower, which reduces the labor quite materially.

A few good shrubs at the side of the grounds when well started require small care, and acquire in time a size and beauty never attained by the same species in smaller grounds. Plants, like people, require elbow room to develop a marked individuality.

Well laid walks of gravel or brick, carried to all needed points in gentle curves, should be counted among the essentials and put down as soon as possible.

"Barrel" hammocks,—the pleasant work of a rainy day,—hung beneath the trees suggest consideration and comfort, make good resting places for weary bones, and do not need to be taken in out of the dew or "scuttled for" if a dashing rain comes up.

Piazza plants, as cannas, achanias, and oleanders are ornamental if large and well shaped. A bed of Phlox Drummondii, petunias, geraniums or cannas may be grown on the lawn where chickens have free range if lightly covered with brush or set about with staves, and will make a glowing spot of color upon the green observable a good distance away. A little care taken to spade up a spot of damp earth in a shady place at the back of the grounds will win the chickens there and lessen the chance of depredations among the flowers, if attended to every day. A swing for the children and a croquet or tennis ground should find place somewhere about and will add to the general attractiveness of the home grounds.

If a larger collection of flowers and plants be desired, they may be set in a paled-in reservation by themselves, which may be the special charge of some member of the family, but would soon hold a good degree of interest for all. The inclosure might also serve as a sort of nursery for shrubs until they attain the size and strength necessary to the struggle for life in the larger liberty of the lawn.

Very much may be done toward the beautifying of our farm places without the expenditure of a great deal of time, money or labor if but the attention and interest be drawn in that direction, and nothing knits the heart to home like beauty striven for and attained; and somehow I have a fancy that if we love our home as we should, that sooner or later in some pleasing way our affection will spell itself out upon the home place in "soft syllables of roses," or in some way potent to every beholder.

DART FAIRTHORNE.

* *

PALMS, CHAMÆROPS EXCELSA.

THE phenomenal cold of '99,—three cold waves in one week of February,—wrought havoc among the palms of the Crescent city. Palms of twenty and thirty years growth have either been killed outright or divested of every branch. New Orleans seems to be nature's experiment station. Where roses bloom till Christmas and palms are ever-green, obviously such visitations of cold as in '95 and '99 test the endurance of plants beyond the consistent cold of more Northern sections, where vegetation has gone securely into hibernation.

The cold "came down like a wolf on the fold," with the unwonted spectacle of the arching, wide spreading fronds of Phoenix Canariensis, Cycas revoluta and Cocos Australis coated with ice at one date and covered with snow at another. These are three very popular palms of the pinnate leaved sorts for growing in the open here, and many of them were superb in scenic effect until the destruction of the past winter. Not one of them escaped; some are dead, but others, particularly Cycas revoluta and Zamia integrifolia, are coming out again. In fact, the cycas are the hardiest of the pinnates, and it is probable that none of them are dead.

Phoenix palms are considered the hardiest and most available palms for general adoption. Among them all Chamærops excelsa has withstood the cold most bravely. It is one of the veteran palms of '95. None of them were killed that winter, and they are the least affected by the cold of '99 of all the palms in the city. The contest as to the hardiest palm has been between Cycas revoluta and Chamærops excelsa. All things considered the latter stands cold the best. Cycas is wonderful in recuperative powers; shorn of every frond, the roots and trunk have reserve force that sends out another handsome crown of fresh ones, as proven here. Chamærops excelsa had the palmate leaves killed on the edges, and in many cases altogether deadened, but the first palm to begin growth and throw off the effect of the cold was this one. The Park Commissioners of Audubon Park have chosen C. excelsa for planting along St. Charles avenue fronting the Park, 400 in number. The scenic effect will undoubtedly be very fine. As no previous winter has been as cold

as '99 it is reasonable to suppose there will be but few others in the future. Experts consider the capacity of Chamærops excelsa to have been thoroughly tested. It is pronounced the hardiest of all palms.

MRS. G. T. DRENNAN.

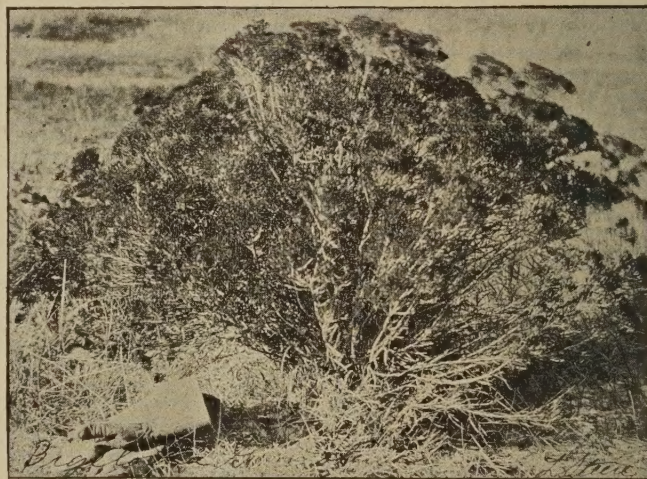
* *

A BIT OF NATURE.

I SAT perched on a great feldspar rock which stood on the bank of a swift mountain stream; it was exhilarating to reflect that in all probability I was the first white woman to be thus enthroned on that particular rock. The oldest old-timer in the valley below had said that no woman could stand such a trip and that there was nothing up there to reward a woman for so much rugged travel. We had come by wagon until the road gave out; then there had been miles of horseback riding. At last the way became too perilous to trust the sturdy cayuse. We had scrambled across the side of the last bluff, hanging on to shrubs and trees lest our feet slip and we fall off that mountain. It was far enough out of the way of any woman save a prospector's wife.

Sitting on that feldspar rock it seemed good to be a prospector's wife. It was charming to read stories in stones; it was fascinating to look for gold where they find it; it was enchanting to see how God lays out His parks, and to learn His methods of tending flowers.

Bunch grass clothed the little mountain meadow, hollowed like a nest on one side the stream; tall pines grew thick close down to the other bank. Just below the rock two fir trees lifted their shaggy arms aloft and spread their broad roots out into the stream. In the shade of these



About one foot high

BIGELOVIA GRAVEOLENS
VAR. GLABRATA

trees the ground was smooth and the grass short, making an excellent floor for our tent. A little way down the stream gray-green willows covered a marshy flat where snow lies late every springtime. In the edges of the willows was a pond where water lilies grew. Not far from the fir trees a well worn path led out of the forest and wound away across the little meadow, losing itself in the sage brush. Bears and wild deer followed this path when they came to drink at the stream.

I glanced apprehensively at the forest, then turned to look in the direction which my husband had gone with his gun but a few minutes before. I wondered if bears were thirsty at that hour of the afternoon. There came the reassuring report of the gun. It meant wild meat for supper, and that bears and other things would retreat if they heard man advancing. The dog at my feet stretched himself, thumped the ground with his tail and sighed; his heart had gone with his master and the gun, but his work was there, taking care of me.

In a northern latitude, nearly 7,000 feet above sea level, summer is a "fleeting show." Wild flowers crowd their blooming time as near together as possible. The rose bushes were almost hidden by their pale petals. Down toward the willow swamp were clumps of blue iris and sweet yellow lilies. In the shade of a big willow was a clump of forget-me-nots. There was the fragrance of syringa and chokeberry blossoms in the air. Small brown birds sang in the scrub pine trees farther up the stream. Half a dozen young chipmunks came out on the fir tree's branches and inquired if only friends were near. Re-assured, they came down the tree trunk and played about on the ground, tumbling over each other like so many kittens. Soon the air seemed alive with humming-birds; they joyed over flowers, they buzzed among branches, they perched upon twigs and plumed their feathers. Nothing up there

worth going to see! It was worth the whole trip just to see one humming bird dress its wings.

The flowers and birds reminded me of the garden where I played in childhood. There an earthly father cherished iris and lily and rose; here the Heavenly Father tended like blossoms for His own pleasure. It seemed strange that He should have such a womanly sort of a garden and be fond of such old-fashioned flowers, for the meadow was tinted by phlox and larkspurs and bluebells. With a thrill of delight I realized how closely those who love and tend gardens are following in the foot steps of the Lord. I resolved to go down out of that mountain, down where men had defiled the earth and spoiled the beauty with which the Creator had endowed it, and redeem one little spot and make it fair and sweet with leaf and bloom.

The pine forest began to cast long shadows over the bunch grass, the chill of coming night was in the air. My husband came along the wild deer's path with his gun on his shoulder and a brace of grouse in his hand. It was time to light the evening camp fire and prepare supper. Broiled grouse and canned peaches, with "dough-gods" and coffee,—and the scent of huckleberry blossoms on the hill.

ALICE B. MCCONNELL.

EVERGREEN TREES.

Evergreen trees are valuable for screens, for wind-breaks, for a background, against which to group trees with highly colored leaves or



FLOWERING HEAD OF
BIGELOVIA GRAVEOLENS

branches and for winter decoration. Too many should not be used together near the buildings, as they give a dark effect and often present an unhealthy appearance.

The best time to plant evergreen trees is in the spring, during April or May, just when the buds are ready to push; or if fall planting is preferred, it should be done in October or November. Great care must be taken that the roots do not become dry by exposure to sun and wind. It is best to select, for their removal, a moist day.

AUSTRIAN PINE, *Pinus Austriaca*, is of a compact growth; it is cone-shaped, with a broad base. The leaves are dark green and nearly six inches long. The branches are equal around the tree, and well distributed. They need plenty of room for good development. This tree can be most safely removed when not more than three feet high.

SCOTCH PINE, *Pinus sylvestris*, is of more open, spreading growth than the Austrian pine. The branches and foliage are not so heavy, and the leaves are of a lighter green. The Scotch pine grows rapidly, and if carefully handled can be reared with very good success.

DWARF PINE, *Pinus montana*. This tree forms a low, broad, dense growth. The trunk is divided at the base into several ascending, smooth branches. The leaves are dark green. This tree grows quite readily when transplanted, and it is considered one of the best for hot and dry locations.

RED CEDAR, *Juniperus Virginiana*, is one of the hardiest and most easily grown evergreens; but the principal objection to this tree is that it is often badly attacked by the fungus *Gymnosporangium macropus*, which spoils much of its attractions.

WHITE SPRUCE, *Picea alba*, is a very good evergreen for this section of the country. Its growth is slow, but neat and symmetrical. It sometimes attempts to grow two leaders, but this can be easily prevented by pruning. The foliage is light green. It thrives on a variety of soils.

COLORADO BLUE SPRUCE, *Picea pungens*. This tree is fully as hardy and even more beautiful than the white spruce. It is noted for its handsome blue-green foliage. The tree is of moderate growth, of rather a regular and compact form. It needs but little pruning, and retains its pleasing color during the entire year. It is comparatively easy to transplant.

W. H. MOORE.

BIGELOVIA.

THERE are several species of this shrub which are natives of the arid plains and mountains of the Rocky Mountain region. The engravings present but one species, but it is fairly representative, in general appearance of them all. In fact it is quite difficult to separate clearly the various species. The one illustrated is *Bigelovia graveolens* variety *glabrata*. It varies in height from one to four feet, according to soil, location, etc. It is a beautiful shrub and would attract attention anywhere, but seems especially beautiful here in contrast with its native heath. Our arid plains, though fairly well clothed with vegetation, are very monotonous in color; except for a brief period in spring, when rain falls, the prevailing tint of the grass, sage brush and other plants, is a dusty gray, very dry in tone, with only a slight tinting of green in the shrubbery. But 'midst all this gray dreariness, though the sun scorch with heat and the pitiless sky drops not a bit of rain, the bigelovia stands fresh and green, its large oval clump of rich, bright greenness appearing in sharp contrast with the dry dustiness of the surrounding foliage. The leaves appear very early in spring and retain their freshness of color until long after severe freezing in autumn. About the last of August, and often continuing into November, each branch is tipped with a cyme of bright yellow flowers clustered in rayless heads.

The bigelovia is a near relative of the golded-rod, *Solidago*, and by some is called the "Rayless golden-rod." A few of the species are confined to the mountain slopes, but most of them are found on the plains, and *B. graveolens* is common to all parts of the arid region, regarding neither latitude nor altitude.

S. L.

Douglas, Wyo.

THE TWELVE BEST AUTUMN-FLOWERING VARIETIES OF CLEMATIS.

Most clematises are pretty; in fact it is hard to tell which to class as best with some of the colors. However, I think that clematis growers will agree with me that the following dozen, which I will try to describe, are of the A-1 quality, both as to growing and flowering properties. Taking them alphabetically, we begin with:

ALBA MAGNA, a lanuginosa. The largest flowering variety in cultivation. Pure white and a good grower.

BEAUTY OF WORCESTER, a lanuginosa. This is an indispensable variety with every one. The flowers come double and single, on the same stem. Color a deep violet-purple. It is distinct from every other dark-colored clematis by having a pure white center. The blooms, too, are either good singles or good doubles, never coming semi-double.

HENRY, belonging to the lanuginosa section. It is without doubt the best all-round single white. A good grower and free bloomer.

JACKMANNI. It is needless to describe this, the best known of all.

JACKMANNI SUPERBA is darker in color than the type. It is a good grower and the flower is well formed.

JACKMANNI ALBA (Smith's) is a very free-flowering single white. Its flower is smaller than Henry's, and has a dark chocolate-colored anther.

MARIE LEFEBVRE, a lanuginosa. Color a light mauve, large, single flower; the plant a good grower.

MADAME GRANGE, a Jackmanni variety. Color crimson, tinted violet-red. The petals are very prettily crimped at the edges. A good grower.

MADAME EDOUARD ANDRÉ is another form of Jackmanni, the color a velvety-red. It is of a pleasing color, and quite distinct from any other. The growth and blooms are free.

MRS. GEORGE JACKMAN, a lanuginosa var., is a white single flower of middle size, invaluable for cut blooms.

PRINCESS OF WALES, also of the lanuginosa type; a deep blush-mauve. A good grower and a large flower.

STAR OF INDIA. Color a reddish violet-purple. A good grower and a free bloomer.

This dozen of varieties are autumn-flowering, hence they will be suitable to plant near each other. There are others that are just as good, perhaps, as these in most ways. They are all pretty, but those I have described certainly comprise the cream of autumn-flowering varieties.—*C. S. F. A., in the Gardeners' Chronicle.*

VICKS ILLUSTRATED MONTHLY... MAGAZINE

ROCHESTER, N. Y., JULY, 1899.

*Entered in the postoffice at Rochester, N. Y., as second class mail matter.*CHARLES W. SEELYE, Editor. ELIAS A. LONG, Associate.
Formerly conductor of *Popular Gardening*

Publishers are invited to use any articles contained in this number, if proper credit is given.

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All contributions, subscriptions and orders for advertising should be sent to VICK PUBLISHING CO., ROCHESTER, N. Y.

Reminders for July.

- Bud roses.
- Layer roses.
- Sow turnip seed.
- Layer flowering shrubs.
- Sow sweet corn for late use.
- Callas and cyclamen bulbs are resting.
- Sow hardy seeds the last of the month.
- Look out for insects and "treat" them.
- Cabbage plants can be set for a late crop.
- Keep the flower shoots off the carnations.
- Beets of quick growing varieties can be planted.
- Be preparing plants with reference to the fall exhibitions.
- Pot freesias the last of this month, if you have the bulbs.
- Plant wax beans every two weeks to keep up a succession.
- Be sure that plants plunged in their pots be given enough water.
- Finish this month the stopping or shortening of chrysanthemum shoots.
- Keep the rake, the hoe, and the hand weeder bright by constant use.
- Keep the vineyard and the orchard clean and mellow, as well as the garden.
- Chrysanthemums can appropriate liquid fertilizer twice or three times a week.
- Cannas and caladiums especially will show their appreciation of liquid fertilizer.
- Radish and lettuce can be sown where they will get shade in the hottest part of the day.
- Shorten shoots of H. P. roses after blooming and encourage new growth for fall bloom.
- Use flowers when in their best condition, and do not leave them to wither on their stems.
- Pinch or cut back young canes of raspberries to two and a half feet; blackberries three feet.
- Plants growing in hot places, such as the south side of a board fence, will be benefitted by mulching.
- Thin out plums and other fruits that may be growing too closely together, thus saving from decay and getting finer specimens.
- Verbenas, geraniums and many other soft-wooded plants will continue longer in bloom if the flowers are cut regularly as they come out.
- Prepare a mellow spot or bed in the garden and insert in rows cuttings of plants that are desired, such as geraniums, abutilons, heliotropes, begonias, various foliage and flowering plants and many of the hardy shrubs.
- Cuttings in the open air can be watered when placed in the soil, and be shaded a few days from the mid-day sun, removing shading morning and evening, and after three or four days altogether. Water them in the evening, and if necessary in the morning. Grass laid between the rows will keep soil moist and cool.

* *

Missouri Botanical Garden.

The annual reports of the director of this Garden, Dr. Wm. Trelease, are of high scientific and horticultural value. The last report, the 10th, is, like its predecessors, of great beauty in illustration and in mechanical execution, and is produced at great expense. It contains fifty-four full page plates of grasses in connection with a descriptive account by F. Lamson-Scribner of the grasses in the Bernhardt Herbarium, which collection is in the possession of the Missouri Botanical Garden. "This collection," says the writer, "is especially valuable to American botan-

ists, as it includes a large number of species, and has recently become even more interesting to the student of American plants as it embraces very many species of our newly acquired territory in the far East,—the Phillipine Islands."

The frontispiece of the volume is a fine halftone portrait of Dr. E. Lewis Sturtevant, who died on the 30th of July of last year, having devoted his life to scientific investigation, mostly in connection with agriculture, and who for a number of years was the efficient Director of the New York State Experiment Station. A most interesting biographical sketch of Dr. Sturtevant is contributed by C. S. Plumb.

"A Sclerotoid Disease of Beech Roots" is the title of an article, illustrated with plates, by Herman VonSchrenk.

This volume, also, contains a full index of all the ten volumes of Reports.

The special report of Dr. Trelease relates to the condition of the grounds, the growing plants, the herbaria, the buildings, the publications of the institution, and facilities for students and the uses made by them. The Gardens form one of the great attractions of St. Louis. From some records made by the gate-keeper it is estimated that the total number of visitors to the grounds for 1898 may have been 89,102. "The largest number on any week day was 1,640, on October 6th, which was the special holiday of the week of the St. Louis Fair. In June, on the Sunday afternoon when, in accordance with the provision of Mr. Shaw's will, the Garden was open to the public, 12,908 persons were counted, and on the first Sunday afternoon in September, when the Garden was likewise open to the public, under the same provision, 5,465 persons were counted."

The "School of Botany" is one of the features of the establishment, and a scholarship in it is very desirable for horticulturists. "It is a matter of congratulation," says the Director, "that nearly all of the persons who have served as assistants or instructors in the School of Botany, have assumed responsible botanical positions on leaving it."

* *

The Beet Sugar Industry.

A very full report, through the Secretary of Agriculture, on the progress of the beet sugar industry, was transmitted to Congress on the 1st of March, 1899, by the President. This report consists of two parts: The first prepared by Mr. Charles F. Saylor, Special Agent of the Department of Agriculture, and the second part by Dr. H. W. Wiley, Chemist of the Department of Agriculture. In his letter to the President, the Secretary of Agriculture, in referring to localities that can produce good sugar beets, says:

It is seen that the Pacific coast still holds the leading place in furnishing areas of this kind. Almost equally favorable areas are presented by Michigan, New York, and a few other States in the northern and eastern portions of the country. * * * It has been demonstrated that where irrigation can be carried on there are large areas in the arid regions where beets of superior excellence can be produced. Investigations have further shown that the limits of successful beet culture can only in exceptional instances be pushed south of the isothermal representing a mean temperature of 71° for the months of June, July and August. * * * The investigations brought out in the former report in regard to the utility of the by-products of the sugar beet industry as cattle food should not be lost sight of. It is evident that the sugar industry and the dairy industry can best flourish side by side.

It appears from the report of the chemist that the States which have produced the best samples of beet, that is, those containing the greatest sugar content, and of the highest purity, are California, Colorado, Michigan, Nevada, New York, Oregon, Utah and Washington. Other States, some portions of which are capable of profitable sugar beet production are Illinois, Indiana, Minnesota, Nebraska, New Hampshire, Ohio, Pennsylvania, Vermont and Wisconsin.

The whole report is very full, consisting of over 150 large pages, and relates to the various features of beet sugar production, and with particular reference to what has already been done in different portions of the country. Mr. Saylor made a trip to Porto Rico and carefully investigated the capacity of the island for the production of sugar from cane and the cost of such production. It is gratifying to know, notwithstanding the advantages of Porto Rico, Phillipine Islands, Cuba and other tropical countries to produce sugar cane, that he thinks our northern farmers can profitably engage in the growing of sugar beets for the production of sugar.

* *

The Gray Herbarium at Harvard.

Many friends and admirers of the late Dr. Asa Gray, says *Gardening*, are making an earnest effort to build up a fund for the better endowment of the Gray Herbarium of Harvard University. The movement took its initial impulse from an anonymous offer to the University of \$20,000 for a memorial chair to be called the Asa Gray Professorship of Systematic Botany. This generous gift is conditional and can be realized only if on or before commencement day, June 28, 1899, the sum of not less than \$30,000, to be known as the Asa Gray Memorial Fund, can be secured. Of the latter sum, the income of which shall be devoted to the support of the Gray Herbarium, \$25,800 has now been subscribed.

Letter Box.

In this department we shall be pleased to answer any questions relating to Flowers, Vegetables and Plants, and to publish the experiences of our readers. EDITORS.

Flower Bulletins.

- 1—Where can I get experiment station bulletins on flowers?
2—What flowers will bloom well in winter in an up-stairs south window, with a dry atmosphere and low temperature? L. S. R.
Albany Co., N. Y.

1—The Cornell University Experiment Station has published a number of flower bulletins, and some of them can probably be procured by writing and asking for them, stating particularly what is wanted. Write to the Station, addressing I. P. Roberts, Director, as above, Ithaca, N. Y.

2—Try hyacinths, narcissus, freesias, crocus and snowdrops; also abutilon, Oxalis floribunda and a few geraniums.

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Making Bouquets.

I think you would do many of your readers a great favor by allowing one page each month for instructions about making or putting up bouquets and floral designs. There are many people who can grow flowers, but cannot put up an artistic bouquet, much less a floral design. I am one of them. By doing so you will make another point which will bring new subscribers. A. W.
Marquette, Mich.

We hope to give in future numbers some instructions of the character mentioned. In the meantime if any of our readers should be able to exploit this subject we should be pleased to receive such correspondence for publication.

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Budding Peach Stocks.

Will you please tell me when and how to graft and bud peach trees that came up from seed last year. M. B. S.
Apex, N. C.

Peach trees are not grafted. They are budded, and usually the same year that they come from seed. The stocks referred to should have been budded in August or September of last year. The bud is inserted low down on the stem, within two or three inches of the soil. If it is found in August or September next that the bark at the base of these stocks will not freely separate, then it may be best to put some buds in the top in the new wood grown this season.

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Rambler Roses.

Will the Rambler roses mix if planted together? Do they need winter protection in northern Minnesota, and if so, what would be the best? MRS. C. W.
Pillsbury, Minn.

No. Roses can be planted near each other without danger of changing their character.

Whether the Rambler roses will need protection in any particular locality in Northern Minnesota can be learned only by trial. A good way of protecting such roses would be to bend them down as near the ground as possible and fasten them there, and then bind straw about them.

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A Variety of Questions.

- 1—Is the lemon verbena deciduous?
2—Is not the Chinese hibiscus deciduous?
3—Would Clerodendron Balfouri be a good fast growing vine for an amateur?
4—Do seeds of the ornamental asparagus germinate readily? E. B. F.
1, 2—Under ordinary cultivation neither of the first two plants mentioned are deciduous.
3—An amateur would probably need experience with this plant before satisfactory results would be secured.
4—The seeds are somewhat slow in germinating, but require only that the seed bed should be kept moist, and with an even, moderate temperature.

++

Plants for a New Strawberry Bed.

I have a good strawberry bed consisting of two varieties, one of which is pistillate and the other staminate, but these have so grown together that I cannot tell one from the other, now that the plants are not in flower. Will it be safe to take young plants from this bed to set a new one? H. W.
Lyons, N. Y.

A good strawberry bed in a garden is of greater value than almost any other crop that might be raised, and, when planting it, it is not well to take any chances that may lessen its productive capacity, such as a lack of fertilizing or pollenizing plants. In this case the staminate variety is supposed to be a good bearer and therefore there could not be much loss in any event. But it is always best to have separate beds of different kinds for the purpose of raising young plants for resetting, and these beds should not be allowed to fruit. Runners from plants not allowed to set fruit will be much stronger.

Hollyhock Disease.

Two or three years ago you wrote me that if the parasite which attacks hollyhocks became very bad, the best remedy was to pull up the plants and burn them. In May, '98, I had about fifty plants, all attacked and the most in very bad shape. I applied the city water with a garden hose, at full force,—about eighty feet pressure,—beginning at the ground and working up on each plant; only two or three were killed; the others, although dwarfed, flowered pretty well. The leaves of most of them were torn into ribbons,—it was a case of kill or cure.

Now, this spring there is not the slightest appearance of the parasite on any plant of the entire lot. The plants, of course, give evidence in their rather dwarfed growth, of having suffered severely last year, but the cold water cure was most efficacious.

I find that water applied in the same manner, though with less force, rids rose bushes of almost all the insects which infest them. Presumably, in the case of the parasite, the cold water prevented the ripening of spores; and, in case of insects, it forces away both the insects and their eggs. S. M. T.
Providence, R. I.

++

Hardy Chrysanthemums.

Please let us know something about hardy chrysanthemums. In the yard at my old home we had maroon, pink, white and yellow of the large kind; also some of the little button chrysanthemums. Will the ones which are for sale potted, stand the winters? Vick's catalogue mentions the hardy, but does not give size, and I do not want the small flowers. RUTH VAN H.
Clearfield, Pa.

There is probably but little difference in the hardiness of the popular varieties of chrysanthemums. Most of them will stand the winter in Pennsylvania and in this State if well protected with litter, leaves, evergreen boughs or some other good protective material. But the large flowers that are seen at exhibitions or at florists should not be expected with garden culture as hardy garden plants. The great flowers are the result of skilful culture, including heavy fertilizing, confining the growth of the plant to a few stems, or in some cases to even one, and the removal of most of the buds, thus allowing the plant to bear a very few flowers at the most. Notwithstanding, these varieties cultivated in the garden and given protection in autumn to guard against frost until the blooming season is over, will prove beautiful and satisfactory.

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Fertilizer for Strawberries.

What is the best commercial fertilizer for strawberries; how much and when to apply to obtain the very best results from a small patch? I have about one and one-half acres, rather thin land; the most of it plants set out this spring and the balance berries picked. MRS. J. R. B.
Republic, Mo.

Get the best complete fertilizer offered in the market by a first-class house. The best always costs the most money per ton, and at the same time is the cheapest. Do not buy a cheap grade if economy and good results are desired. From 500 to 800 pounds to the acre would not be too much to distribute along the rows, cultivating it in. The application should be made from the latter part of June to the middle of July, but the earlier the better, to get the benefit over as long a season of growth as possible. This will help the plants and give them a good set of roots to enable them to endure the winter, and to form good crowns for next season's fruiting. In the spring, as soon as growth starts, sow nitrate of soda at the rate of 200 or 300 pounds to the acre,—say 250 pounds. This will push the plants along quickly, make the berries larger, and greatly increase the yield. For ideas on this subject that will be of use for future guidance, our correspondent is advised to address the Department of Agriculture, Washington, D. C., and ask for Farmers' Bulletin, No. 44.

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About some Houseplants.

- 1—How can I grow petunias in the house without mildew?
2—What are the causes of mildew?
3—Why do heliotropes shed their leaves? I have one with leaves six inches long, but only on the end of the branches.
4—What ought to be done with cyclamen bulbs planted last November and only two to six small leaves now, May 17th?
4—A year old Fuchsia speciosa was repotted last fall in a ten-inch pot; left several inches on top for water but the roots grew on top till I've filled it full of soil, and still the roots are uncovered and turn yellow. Ought it to be repotted while blooming? I had a five-year-old one in same size pot, but it never was so full of roots. A. P. A.
Brunswick, Me.

1, 2—Our experience is that the petunia is a particularly good plant for window cultivation in winter, and it is not usually subject to mildew. If this occurs it is probably the result of sharp drafts of cold or cool air.

3—The heliotrope is not a very good window plant in a cold climate. The dry air of a heated room in winter affects it injuriously. Some means should be taken to supply moisture by evaporating water.

4—Give the cyclamen bulbs only enough water during the summer to keep them from drying out. In September repot them and water and start again to growth.

5—The fuchsia can be given a larger pot or tub without disturbing the roots. Turn out the whole ball and reset it in a larger pot.

THE BALTET PRUNING TABLES.*

Indicating the Proper Pruning of Flowering Shrubs.

At the Congress of Horticulture instituted by the National Society of Horticulture of France and held in Paris on the 20th and 21st of May of last year, one of the questions previously announced for consideration was the following:

Ornamental trees and shrubs of the open air cultivated for their flowers. Operations of pruning in harmony with the knowledge of their mode of flowering.

This question was responded to by the presentation of two papers, or memoirs, one by the well-known horticulturist, M. Charles Baltet, the other by M. Chargueraud. That of the former was crowned by the Society's medal. Both of them are papers of more than ordinary value. The purpose of this communication is to place in possession of the members of the Western New York Horticultural Society the essential portion of these memoirs, constituting, as they do, correct working formulæ for the practice of pruning the flowering shrubs. Our own gardening literature contains more or less on this important subject, but the best instructions heretofore given have still left something to be desired. The tables or lists of plants supplied in the memoir now under consideration fill the want that all practical gardeners or pruners have felt in connection with the care of shrubs. The plants named in the tables are given their correct botanical names, carefully substituting them for the French terms employed by M. Baltet in his memoir. † An explanatory word has been added where it seemed desirable, and the order of arrangement in the lists has been changed to follow alphabetic sequence, as became necessary in using the botanical instead of the French names. Otherwise there is no change, omission or addition.

These tables, ample as they be, are not yet complete, and it is announced that both the writers mentioned will continue their studies of this subject, and probably supplement the work which they have already done. It may be suggested that some of our own members are favorably situated in having under their care or supervision large and varied collections of flowering shrubs and trees and their observations of the same will enable them in future communications to this Society to propose additions to these tables of plants, thus adding to their completeness and usefulness.

The general principles that determine the proper pruning of flowering shrubs and trees have long been recognized and more or less distinctly formulated and promulgated by horticulturists. One of the most complete statements of these principles was made in an editorial of the *Garden and Forest*, in December, 1896, and which has been reproduced by Mr. Bailey in his excellent monograph, "The Pruning Book," recently issued by the Macmillan Company, and which is one of the Garden Craft Series. But the list of plants supplied in this work, good as far as it goes, is very brief and quite inadequate for practical purposes. It is a pleasure, therefore, to make good this deficiency in the present communication prepared from a presentation of the subject in *La Semaine Horticole* in its issue of July 23, 1898.

PRINCIPLES OF PRUNING SHRUBS AS FORMULATED BY
MR. CHARLES BALTET.

1.—Prune when dormant plants of those species which flower during the growing season on the young, herbaceous shoots. This is *Winter Pruning*, or *Dry Pruning*.

2.—Prune in full growth, as soon as the flowering period ends, the plants of those species which, when the sap starts, expand their flowers on the branches of the preceding year or older ones. This is *Summer Pruning*, or *Green Pruning*.

In both cases the desired end is that the floral elements shall come well constituted at the blooming epoch. Summer pinching or shortening strengthens, or causes to branch, the long shoots which should flower in winter or the following spring, and thus increases the show of flowers.

Pruning is *long* when more wood is left on the plant, *short* when more is cut away, *combined* if the two operations are applied at the time on the same shrub, a system preferable to alternating.

Without rules to follow, long pruning or the absence of pruning should be preferable to exaggerated mutilations. Everywhere and always the trimming of trees and shrubs is recommended by thinning the branches that grow too dense, their rejuvenation by the suppression of old, sterile, wornout stems, and replacing them with vigorous shoots, and, finally,

* A paper prepared by Charles W. Seelye, and presented to the Western New York Horticultural Society in January last, and published in the "Proceedings" of that Society for the year 1899. As here republished two or three omissions have been supplied and a few corrections made.

† Editorial explanations or notes in the tables are enclosed in Parentheses, preceded by an (*) asterisk.

the cares of neatness, clearing away scaly or mossy bark, the suppression of dead wood, broken pieces, suckers and the withered remains of flowers.

The instructions for pruning as given by M. Chargueraud are somewhat more precise, and confirm and also supplement those of M. Baltet.

DIRECTIONS OF M. CHARGUERAUD.

For those shrubs of which the flower buds are apparent on the terminal and secondary shoots, the syringa, Forsythia, Jasminum nudiflorum, Viburnum, etc., the pruning soon as the flowering ceases consists in taking away the withered flowers, the worthless or decaying branches, then shortening the branches which are too long down to good eyes, so as to give vigor to the new shoots which are to continue the growth or replace the old branches, and carry flower buds in autumn.

For those species whose flower buds come upon little lateral shoots, or spurs; on old wood, such as the cherry, plum, apple, etc., it is proper to take away the decaying branches and to prune the vigorous branches in a way that will cause to form at their base, on the old wood, new, little, flowering spurs, and also to maintain sufficient vegetation in the old spurs.

Vigorous growing, sappy branches or suckers, which sometimes spring directly from the base of the stems or on the old wood, are not preserved, only as they may be necessary to replace the decaying branches, in order to maintain the desired form or dimensions, or, finally, to increase the size of the subjects according to their vigor.

In regard to the trees and shrubs bearing their flowers on the new herbaceous shoots, they are pruned at the end of winter or commencement of springtime before vegetation shall have started.

Knowing that the flowers of these shrubs come upon the shoots issuing from eyes of branches formed the preceding year, the operations of pruning ought to be practiced in a manner to cause a sufficiently vigorous development of the shoots which will bear flowers.

After taking away the parts which are dead, decaying or useless, the branches retained are pruned longer or shorter according to their vigor, or according to the end desired to be obtained. If abundant blooming is desired long pruning is practised, or from three to six eyes and more; if, on the contrary, a less abundant bloom is desired, but with flowers or flower-spikes of greater dimensions the number of branches is reduced and short pruning is adopted,—that is, pruning to one or two well developed buds; for example, hybrid roses, the hydrangea, hibiscus, etc.

BALTET'S TABLES.

DIVISION I.

SMALL TREES AND FLOWERING SHRUBS.

CLASS A.

Summer or Autumn Flowering Shrubs.

Prune in winter or spring, when plants are dormant.

Abelia	Lagerstroemia
Actinidia	Ligustrum
Amorpha	Lonicera
Baccharis	*(Includes the Fly Honeysuckle section, with the exception of L. Standishii and L. fragrantissima. Also the True or Twining Honeysuckles, including the Belgian and Japanese species.)
Bignonia	Leycesteria
Buddleia	Lycium
Callicarpa	Myrtus
Calycanthus	Nerium
Camellia	Pavia—Californian
Cassia	Philadelphus
Ceanothus	Photinia
Clematis	Potentilla
Sections Flammula, viticella, Jackmanni, lanuginosa	Rhus
Clethra	Robinia hispida and New Mexican
Colutea	Rosa, (remontant)
Cornus	Rubus
Desmodium	Sambucus pubens
Diervilla Canadensis	Solanum
Genista	Spiraea (exceptions)
Halesia	See special list
Halimodendron	Symphoricarpos
Hibiscus Syriacus	Tamarix
Hydrangea (Am. species)	From India, China, Germanv, and Kaschgar
" paniculata	Viburnum tinus
Hypericum	Vitex
Indigofera	
Itea	
Jasminum (exceptions)	
Kerria	

CLASS B.

Spring Flowering Shrubs.

Prune after blooming, or when in leaf.

Amelanchier	Phlomis
Amygdalus	Prunus
Arbutus	* (Including Double Flowering Almond, Dwarf Double Flowering Almond, P. tomentosa, p. triloba, and the double flowered P. virgata. Also the double flowered variety of P. divaricata or Myrobalana, and the double flowering Sloe, P. spinosa fl. pl., and Prunus Persica or Persica vulgaris, the Peach and its varieties, and Prunus Padus and its varieties.)
Calycanthus	Pyrus Japonica (Cydonia) and varieties
Cerasus	Rhodotypus
Cercis	Ribes
Choisya	Rosa (non-remontant)
Cistus	Rosmarinus
Clematis (patens and florida)	Sambucus nigra
Coronilla	Spiræa (exceptions)
Cratægus oxyacantha	See special list
Cytisus	Syringa (Lilac)
Deutzia	Tamarix Gallica
Diervilla rosea (weigela) and varieties	" African
Exochorda	Viburnum, French and Asiatic
Forsythia	*(Includes V. Lantana, V. opulus and variety, and V. plicatum)
Hydrangea (Asiatic)	Wistaria
Jasminum nudiflorum	
Lonicera fragrantissima and Standishii	
Malus	
Neviusa	
Olearia	
Pæonia Moutan (Tree peony)	
Persica vulgaris	

CLASS C.

Shrubs not requiring pruning, but simply Removal of Old Wood.

SECTION 1—SPRING BLOOMING.

Akebia	Daphne
Andromeda	Fraxinus Ornus
Azalea	Halesia
Berberis	Kalmia
*(B. vulgaris and varieties, and B. Canadensis)	Koelreuteria
Calophaca	Lonicera tatarica
Caragana	Magnolia
Cerasus laurocerasus and C. lusitanica	Mahonia
Chionanthus	Raphiolepis
Cotoneaster	Rhododendron
Cratægus Pyracantha	Skimmia
Cytissus Laburnum, or Laburnum vulgare	Staphylea
	Viburnum (American species)
	Xanthoceras

SECTION 2—SUMMER BLOOMING.

Aralia	Robinia Pseud-acacia and R. viscosa
Artemisia	Yucca
Cladrastis or Virgilia	
Pavia (except Californian)	

DIVISION 2.

LARGE FLOWERING TREES NOT REQUIRING PRUNING.

Æsculus or Horse Chestnut	Pyrus torminalis (Wild Service tree)
Catalpa	Robinia (exceptions)
Liriodendron tulipifera	Sophora
Paulownia	Sorbus
Pavia	*(The species and varieties of Mountain Ash.)
Pyrus aria (White Beam tree)	

PRUNING THE SPIRÆAS.

Mr. Baltet, in his paper crowned by the Paris Congress, divided this important genus into two groups based upon the epoch of blooming.

SECTION 1.

Spiræas Blooming in the Spring.

These ought not to be cut in winter. Reduce the branches when the season of bloom is past, cutting shortest the most vigorous subjects, unless summer pinching is practiced. The following kinds belong to this division:

Sp. chamædrifolia, or Germander-leaved
 Sp. hypericifolia, or Hypericum-leaved. Cut of medium length
 Sp. opulifolia, or Guelder rose-leaved. Top the long shoots
 Sp. ulmifolia, or Elm-leaved. Cut away half the shoot
 Sp. prunifolia, or Plum-leaved. Pinch in summer the side shoots
 Sp. argentea
 Sp. Van Houttei. Cut away one-half the branches which have bloomed
 Sp. amoena
 Sp. lanceolata, or Reevesii, and its varieties. After blooming these plants should be cut long
 Sp. Thunbergi. Prune scarcely any

SECTION 2.

Spiræas Blooming in Summer or Autumn.

Prune in winter. This division includes the following species and varieties:

Sp. arisæfolia	Sp. Bumalda and its variety Anthony Waterer should have the ends of the shoots removed in winter
Sp. salicifolia	
Sp. sorbifolia	
Sp. Billardi	
Sp. Douglasi	Sp. Lindleyi, cut short, even down to the ground
Sp. Fontenaysii	
Sp. Callosa, or Fortunei, and its varieties	Sp. Nobleana
All the Fortune spiræas should be cut about half length	Sp. corymbosa

The spiræas of which the branches are compact ought to have in winter a thinning, or a thinning and pruning combined.

Those of a dwarfer type it will be sufficient to cut back the shoots that have flowered.

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ETHICS OF THE FLOWER.

SIDE by side with music and pictures, in their refining influence, ranks that most beautiful of all vegetable life,—the flower. The man who loves music, pure and beautiful pictures, and flowers, has little that is gross or vulgar in his nature. It is impossible that in the same breast should prevail instincts that are coarse and refining, degrading and elevating. The finer sensibilities of his being are awakened and quickened into new life. The flower, in its beauty and purity, feeds this new impulse; its fragile, delicate texture appeals to his finer sympathies; its beauty charms his eye and endows him with an ever increasing love of the beautiful; it imparts to him the desire to extend to others the blessings he enjoys.

So it is that into the sick room and into the prison and hospital these tender messengers speed on their errand of love, speaking to the sufferer of the kindly sympathy felt for him by the outside world. The flower's mission can never be fully realized until it is made to blossom in every wretched hut and every darkened dungeon in the land; till the universe is filled with its beauty and fragrance, and hearts once sad are cheered and comforted. Myriads of thoughts arise when contemplating the dear, old-fashioned flowers. Early memories cling in tenderest love around those flowers we loved in our childhood. Perhaps clustered round each of them are thoughts that are incentives to noble deeds.

Who can estimate the influence of the modest violet, the pure lily, or the rose in its regal beauty?

There is something peculiarly charming and attractive in the life of the dainty wild flower, which despite winter's frost or summer's scorching sun struggles bravely on, gaining over all difficulties a triumphant victory. Uncared for, without nurture or protection, it grows and blossoms to delight the eye of man. What an exhibition of God's love of beauty! He clothes the fields with lilies that life may be brightened and cheered. These delicate, beautiful wild flowers bring to us, too, a lesson,—we should, by our actions and words, scatter flowers in the pathway of others. Through highways and hedges let them be sown broadcast, to spring up and blossom, shedding forth their rich perfume. So shall we aid in carrying forward the great mission of the flower,—a mission of purity, sympathy and love.

EMILY H. WATSON.

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MUSHROOM COLLECTING.—As the season has arrived when various kinds of mushrooms are to be found in woods and fields there is a desire on the part of many persons to gather and eat them. It should be distinctly understood that it is unsafe to eat mushrooms so gathered, and unless one has positive knowledge in regard to such kinds as are harmless, and restricts collection to those kinds, the pastime of mushroom hunting should be let severely alone.

PHILADELPHIA EXPOSITION
OF 1899.

An Exposition on entirely novel plans will be held in Philadelphia the coming fall. The National Export Exposition will give a display of American manufacturers for the expansion of export trade, and it will be the first thoroughly American exposition ever held in this country. The manufacturers of the United States, who excel the world in quality and price, will be given a chance to show their products to the business man and buyers of Europe and other foreign countries. The range that these exhibits will take will be far-reaching, including everything from a locomotive to a baby carriage, from the highest grade of tools to the smallest novelty devised by ingenious workmen. In addition there will be samples of goods made in Europe which sell readily in foreign lands, arranged so as to give the manufacturers of America a chance to examine them, and thus be able to meet competition. There will also be a complete display of the proper methods to pack, label, and ship goods to foreign countries.

In connection with the Exposition there will

aggregate thirteen acres. In this building will be located a spacious auditorium, with a seating capacity of 5,000. This building will be permanent and the decorations magnificent.

The manufacturers of agricultural implements and farm machinery applied for so much space that it became necessary to erect a special building for this class of exhibits. The building will be 160x450 feet in size, and in it will be displayed every style of agricultural machinery made in this country. In addition there will be a field twenty acres in size for traction and road-engines, heavy machinery, wind-mills, etc. As this will be the most comprehensive exhibition of agricultural machinery ever made, no manufacturer can afford to miss being represented. It will be the first Exposition where the manufacturers of those lines will have an opportunity of coming in direct contact with dealers from foreign countries. In addition to this the Exposition will draw thousands of visitors from every part of the United States.

There will be numerous detached buildings



NATIONAL EXPORT EXPOSITION
MAIN BUILDING

be an International Commercial Congress, to which will come delegates from all the commercial centers of the world; representatives from foreign governments, Boards of Trade, Chambers of Commerce, who will meet to discuss commerce and trade. This will be the largest gathering of foreign business men ever convened in this country, and it is expected that their visit will prove extremely helpful to the commercial interests of the United States.

The National Export Exposition is under the control of the Commercial Museum and the Franklin Institute, two of the largest institutions in the United States. It has received the official indorsement of the United States Government, and the Governors and Legislatures of nearly every State. All the money necessary for the carrying out of the Exposition on the broad lines adopted has been raised.

The Exposition grounds will cover at least seventy acres, and more ground may be secured. The buildings now in course of erection will be massive and beautiful. They will be of novel construction, structural steel and brick being the principal materials used. The main building will cover nine acres, and the exhibition space on the floor and in the galleries will

for special exhibits, and a Transportation building, in which will be shown locomotives, freight and passenger cars, electric cars, automobiles, etc.

Though the Exposition was primarily designed to extend the export trade of the United States, the attractions that are to be provided by the management will be so novel that visitors will be drawn from all parts of the United States.

There will be concerts every afternoon and evening by the leading musical organizations of the country. On a broad esplanade, 800 feet long and nearly as wide as the Chicago Court of Honor, will be erected quaint structures in which will be shown the habits, customs, modes of life and amusements of the Philippines, Hawaiian Islands, Porto Rico, Cuba, China and other countries. The buildings will be peopled by natives of those countries brought here expressly for the Exposition. The Chinese village will contain over 400 natives. There will be numerous other amusements on this Esplanade, and it will prove a very attractive spot for the general visitor.

As the National Export Exposition is unique and quite distinctive in character and scope, it

will prove extremely interesting to every American who takes pride in the development of this country's commerce, and of especial value to the farmer on account of the large exhibits of farm machinery and agricultural implements that will be on view.

HOW TO EXTERMINATE THE SQUASH BUG.

ONE of the hardest insects to keep in check is the abominable squash bug, so destructive to squashes, cucumbers, and other members of the genus. Poison does no good, as they are sucking insects, and the only way to hold them in check has been to hand pick them and the eggs.

Late one autumn, during a spell of bright, clear weather and cool nights, I happened in my squash patch about sundown. Several inferior squashes had been left on the vines; I thought they had a peculiar appearance, and examined them closer. The side of the squash next the sun was completely covered with mature squash bugs, so thick that the skin of the squash could not be seen. Every squash in the field had its covering of squash bugs. A bright thought struck me, and I set to work killing bugs. The air was becoming cool and the bugs stiff, and they were easily brushed off and killed with my foot or a piece of board. Over 500 bugs were killed on some of the squashes. The next evening the patch was again gone over and many bugs killed, but not nearly so many as the evening before. This was repeated every evening as long as I could find bugs; the result was that the next spring I had very few bugs. I have followed this plan every year since with complete success.

MARTIN BENSON.

CARBON BISULPHIDE.

Carbon bisulphide, also known as bisulphide of carbon, a liquid, is very volatile and for that reason is used in grain bins for destroying insects injurious to grain. The gas is heavier than the air and goes downward, penetrating every portion of the bin. One pound of the bisulphide, placed in shallow pans in a tight bin, is sufficient for 100 bushels of grain. The cost, if bought in 50-pound cans, is about ten cents per pound. Being highly inflammable, fire must be kept away from it, a lighted pipe or cigar being sufficient to ignite it. It is not injurious to the grain nor to plants when used for the destruction of insects.

I CURE FITS

When I say I cure I do not mean merely to stop them for a time and then have them return again. I mean a radical cure. I have made the disease of FITS, EPILEPSY or FALLING SICKNESS a life-long study. I warrant my remedy to cure the worst cases. Because others have failed is no reason for not now receiving a cure. Send at once for a treatise and a Free Bottle of my infallible remedy. Give Express and Post Office.

Prof. W.H.PEEKE, F.D., 4 Cedar St., N.Y.



**PARKER'S
HAIR BALSAM**
Cleanses and beautifies the hair.
Promotes a luxuriant growth.
Never Fails to Restore Gray
Hair to its Youthful Color.
Cures scalp diseases & hair falling.
50c, and \$1.00 at Druggists

MUD BOUND.

The clouds one dull December day
Were spreading out their garments gray,
And, thickly veiled, the sun at noon
Seemed mourning for the loss of June.
Slow circling down the dark'ning sky,
Of rain and mud the prophecy,
The clouds repeated, still, the threat
That knee-deep roads we soon should get;
Umbrella none, however stout,
Could keep the wind and rain all out;
On hillside and on dark'ning dell
All day the pearly raindrops fell,
And, when a second morning shone,
A firm, hard path was all unknown,
No dry thing could we call our own;
Above the soaking pastures bent
The gray walls of the firmament;
All cloud above, all mud below,—
A universal overflow!
The old familiar paths of ours
Take marvelous depths; a horse's powers
Are taxed beyond what seemeth good
To draw a wagon without load.
At home the farmer, mud-bound, sat
And ponder'd o'er the problems that
Confront a man so forced aloof
From fellowship. A fact that's proof—
Where'er our roads are mended well
'Twill be a modern miracle.

DAME DURDEN.

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CUBAN FARMERS NEEDING HELP.

CUBA, by rights, should be a farmer's paradise. In those parts of the island where irrigation has been introduced, the crops succeed each other without intermission. As fast as one is gathered another is planted, leaving no intervening dull season for the farmer. In other parts of the island two crops can be grown during the year,—one in the spring, at the beginning of the rainy season, and the other at the close of the rainy season, or during the fall.

Nearly two years ago Gen. Weyler, Captain-General of the island, charged that the farmers were giving assistance to the insurgents, and thereupon ordered that all inhabitants of the country districts should immediately forsake their homes and go to the nearest fortified town, where they should then remain until further orders. Gen. Weyler then gave orders to the commanders of the military districts to burn and ravage the country; to destroy everything that could sustain life, and to make of the fertile country a desert. These orders were carried out to the letter. The entire country west of the Province of Santiago was laid waste, and the farm folk were driven pell-mell into the towns, there to die by thousands of starvation and disease.

After the poor country people were concentrated in the towns they were forbidden to leave the limits on any pretext whatever. If found outside of the limits of the town they were shot down without mercy. Here, then, were these wretched creatures, shut in, literally prisoners, but without the care our lowest prisoners would receive; for they were without food, clothing, or even the bare necessities of life.

Gen. Weyler was succeeded by Gen. Blanco, and the people were told that they might go out into the devastated fields to dig up with fingers and sticks what few edible roots were left in the ground. It is asserted that owing to the conditions arising from the Weyler concentration, fully 300,000 men, women and children died before help from America reached them. Later, when American relief agents were recalled from Cuba because of the declaration of war between the United States and Spain, 250,000 persons were left helpless who had

been dependent on the United States for their daily portion of soup and bread.

Do not think for a moment that the reconcentrados were the poorest classes or the professional beggars. Instead, these are the men who two years ago were independent farmers, able to care for themselves and their families; these are the people who gave their brothers, fathers, and sons to the cause of liberty.

It is estimated that at present there are at least 150,000 orphans left, with no one to give a thought to their welfare, physically, morally or mentally.

The Cubans are not a lazy people. They are glad to work, if given a chance. The plan formulated by the Cuban Industrial Relief Fund is not to give to the people without return, but to put the relief on a firm business footing.

First, this plan is to provide immediate work for the able-bodied poor by establishing relief farms under the superintendence of capable American farmers. Ordinary food crops will be grown on the farms and sold in the best available market, the proceeds being returned to the fund to be used over again in the same way.

Second, to advance as loans to the small landowners sufficient work-oxen, agricultural implements, seeds and food supplies to enable them to resume the cultivation of their farms.



The advance thus made will be returned to the Fund and used over again for the same purpose. The rehabilitation of the desolated farms will also give employment to farm laborers.

Third, each landowner so helped will be required to adopt one or more orphans to bring up as he would a child of his own. This will do away with the need of spending money for orphanages.

If each person who has the good of humanity and his country's honor at heart would do something to help the work along, in ever so small a degree, the ultimate prosperity of Cuba would be assured, and our credit as a Christian nation maintained.

All contributions should be sent to the Continental Trust Company, 30 Broad street, New York City.

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APPROVED VARIETIES OF CURRANTS.

At a meeting of the Minnesota State Horticultural Society, a report of which is published in the *Minnesota Horticulturist* for March, there was a consensus of opinion that the Red Dutch and the White Grape were the best currants for the family garden. Several members attested to the valuable qualities of the North Star, claiming it to be the most prolific variety for market. The Long Bunch Holland is a hardy, productive and profitable late variety, valuable either for market or family use.



Celery planting time.

Portulaccas are sun flowers.

To the orchard with soap suds.

Propagate shrubs by layering.

Vallotas in bloom are water-lovers.

Plan to capture some prizes at the fair.

Canned tomatoes must take a back seat.

The brighter the radish the better it tastes.

A clean garden is always a pleasure garden.

Climbing plants with nothing to cling to look pitiable.

Heliotrope for next winter should be kept flowerless now by pinching back. This likewise induces a fine, stocky growth.

Fruit shippers see the advantage of garnishing by adding some foliage. Do this more on the table. It adds new relish to the food.

Hail Columbia, sweet corn! It is glorious to live in our mighty land because of delicious sweet corn. There is hardly an European country in which it is raised.

Mulching. I get the best results in the care of young trees by applying a mulch of straw or litter and over this several inches of earth. This adds to moisture and coolness.—*Amateur.*

Many overlook the right principle in fruit thinning. It is the multiplication of seeds in

Have you found a
MANUFACTURER
FOR YOUR
INVENTION?

If not, why not?

One of the greatest difficulties encountered by the inventor who desires to put his device on the market is to find a reliable manufacturer who will produce it on a commercial scale in any desired quantity, and at a minimum of cost. Many an inventor has been discouraged and has never sought to make and sell his invention, simply because of the exorbitant charge of the model-maker who turned out the first working model of the device. Model-makers are not manufacturers. The former produce a single article by tedious hand labor; the latter turn out thousands by skillfully devised machinery. But, says the inventor, where shall I find a manufacturer?

The Patent Record
Will find a Manufacturer
For you.

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many small specimens, and not the multiplication of bulk in fewer specimens that tells so heavily on the tree's vitality.

It's losing business in every way to leave horse manure in heaps. Its essential value thus goes to the air instead of to your crops and your purse, while it is now well known that house flies breed in heaps of horse manure. That does not occur if the manure is spread as it accumulates.

An over-bearing Baldwin apple tree, especially, should have the fruit thinned. In this case it means not only more and better fruit this year, but the chance for a crop next year, while to overbear is almost sure to mean an off season a year later. Indeed sometimes an excessive crop of Baldwins one year results in the absence of a crop for several seasons afterwards. Intelligence demands that such skips be avoided. And it is usually in these off years with poor orchardists that fruit commands the best price.

Liquid manure. Perhaps you are not convinced of its great value in every department of the garden and orchard. If so, why not give it a fair trial? The growing season,—in the case of fruit, the crop-developing season,—is the proper time to apply it. Many a mistake has been made, and sometimes even positive harm been done, by applying liquid fertilizers when the roots were dormant,—never when active growth is present. Make your test this season on alternate strips of say three rows apiece. In this way the advantage will soon be apparent.

Peonies were never more popular than they are at this day. This is an excellent sign of a growing wholesome taste for fine, hardy flowers. One must wonder that such magnificent,—shall we not say ideal—garden flowers were for so many years slighted. Beautiful in color, grand in boldness and form, some of them delightfully sweet, and all well supported by long stems above matchless foliage, what more need be said in their favor? When we add that the plants are perfectly hardy and of the most enduring perennial nature and remarkably free from insects and disease, enough has been stated to indicate why peonies should always occupy the very front rank as popular flowers.

Bargain days. That there are bargain days in summer fruits is well known to every buyer in our towns. Strawberries have been peddled from house to house at five and six cents a quart on several afternoons this season, in the suburbs of Buffalo where the writer resides. A report comes from Lexington, Ky., that the same fruit has sold there at two and three cents a quart. For the grower's sake it is gratifying to know that such bargains are the exception, and are perhaps at times inseparable from a fruit so perishable. But it is an ill wind that blows no good, and so it happens that when these exceptional bargains do occur, the poorest of town people—and that includes the children—can have a taste of fresh fruit, who otherwise would go without.

A lesson on growth. How much does a tree grow? The average growth of a thrifty tree in a season is amazing. Near the writer's window is a vigorous elm about twelve years planted. That which on this tree was a mere switch a month ago when growth began, is today a branch having fourteen young laterals on each of two sides, varying from two to eight inches in length apiece,—they will average fully six inches each, as the shorter ones are but few. That makes a total of eighty-four inches, or seven feet of linear growth on one branch.

The branch alluded to is exceptionally thrifty among others. However, in looking over the tree it would not seem away from the fact to say that there are forty clearly defined growing branches, which if not as vigorous as the one cited, yet may be put down as having on an average made an aggregate growth of five feet apiece to date. That would make 200 linear feet within a month of leafage time. By the end of the growing season it will probably be double this, or 400 feet. For a dozen trees to grow an aggregate length of a mile of new wood the growth of each would have to exceed that of the tree alluded to but very little. The growth of vigorous vines, shrubs, or other garden subjects is equally impressive. A wonderful place is a garden. Reversing the old saying that "Nothing from nothing comes," this lesson of the rapid growth that takes place in trees, shrubs and plants emphasizes the need of "something" in the shape of plant food to meet their needs.

* *

PROPAGATING PRUNUS TRILOBA.

In writing of this plant in *The Garden*, W. J. B. has the following to say in regard to its propagation:

As to propagation, the rule is, I believe, to work this shrub on plum or some other stock. But like a good deal more grafting and budding of hardy trees and shrubs, it is unnecessary. *Prunus triloba* can be easily obtained on its own roots by means of cuttings, and plants so raised are much better, for the suckering near the ground, which is an endless nuisance on many grafted plants, becomes an advantage when on their own roots. The cuttings should be made of the young shoots just as they are becoming woody, and short ones should be selected with a slight heel of older wood. Success depends chiefly in taking the cuttings at the right time. * * * The wood must not be too soft and succulent or the cuttings will decay, and it must not be too hard or they will not root readily. A propagating-frame with very gentle bottom heat is all that is necessary. Layering no doubt will prove a still surer means of increase.

STRAWBERRY LEAF-ROLLER.

The work of this insect was very noticeable in the strawberry patches the past summer. In many instances where the attacks of the insect were prolonged, large numbers of plants were killed through the loss of their foliage. Quite often the strawberry patches had the appearance of having been scorched in spots by fire. In Kansas there appear to be three distinct broods during one season, each succeeding brood becoming more numerous and consequently more destructive. The following observations were made during the past year:

On June 14th the first brood of adults commenced to appear, and continued to emerge till the 24th; on June 22d eggs for the second brood were being laid; on June 24th the second generation of larvæ or worms were commencing to hatch out; by July 25th many of the larvæ were in pupal state; from July 21st to August 10th the second generation of adults were emerged; on August 14th larvæ or worms of the third generation were found in large numbers; by September 3d many of the larvæ were going into the pupal state.

At present we have no new remedies to suggest aside from those usually given. Paris green applied to the infested plants at the first appearance of the worms would be very effective. To determine the earliest appearance of the worms necessitates a very close watching on the part of the fruit grower. After the crop is gathered, mow the beds and collect and burn the leaves. Do not purchase plants from infested patches. Where new beds are to be started, plow under the old ones; for by this means many of the insects will be buried and destroyed.—*Kansas Agricultural College.*

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THE FAMILY COZY-CORNER

A GARDEN MEMORY.

Among the scenes which come to remembrance of early days in Illinois, is one of a little wild flower garden which occupied one corner of my father's extensive grounds. It was the property and the principal occupation of the two chubby little bright-eyed brothers who planted it, and came to be a spot to which, escorting visitors thither, we "pointed with pride," as containing a fairly complete collection of the wild flowers of that locality.

Adjoining the houseplace proper was a grand park-like wood of many acres. Swelling knolls covered with hickory, walnut, elm, oak and maple trees, many of whose majestic boles could not be encircled by even a man's arms; a grand natural grove merging into rolling pasture lands. Through wood and mead ran a fine stream, and shy indeed and hard to please was that wild flower which could not find its natural habitat somewhere amid these glooms and glades. Of a truth almost any plant or flower peculiar to Central Illinois might be found within that fair demesne.

While the children were yet in pinafores the garden was commenced; a basket and a case-knife supplied their needs in the way of tools, and back and forth they trudged—these little naturalists,—on sunny days and showery ones, bearing their woodland treasures between them, the happiest-hearted little comrades in the world. Almost insensibly the garden began to grow. Nobody knew their plans, if plans they had, and nobody interfered with their own unique manner of carrying them out. The whole place was inclosed, so it was safe to turn them loose, and well they enjoyed and employed their freedom.

They seemed to make a specialty of a flower at a time; if they began on violets, violets it was until they had collected and planted roots of every variety within their range. Not content with a single speci-

men, they brought them in by the basketful, till whole plots of favorite flowers began to appear. The entire operation, finding, digging them up, resetting and cultivating was carried on by themselves alone,—so far as I can remember without any instruction, instigation or oversight.

Year after year the work went on. Nine months of the year were theirs for gardening; for little they knew and cared they less about favorable seasons. When school days came and knowledge increased the garden grew in corresponding ratio. Their leisure hours were spent in forest and field. They made friends with everything to be found therein; and a search through their pockets at night was poorly rewarded which did not bring to light some trophy of the chase,—some mouse or mole, flying squirrel, bat or butterfly, humming-bird, arrow head, fossil, punk, or petrefaction, keel or calamus root, etc., which they had found afield. And tradition hath it that on more than one occasion wee, wiggling snakes had been known to creep out of their tiny jacket pockets in school hours, to their own consternation and their teacher's dismay. This, however, I consider a simple tradition; my own opinion being that they drew the line at snakes,—for I tremble to think what our chronic state of apprehension might have been, if ever they had spent upon that branch of natural history the same devotion and tireless energy which they gave to their little wild garden.

Well versed they became in woodcraft, too. Every plant, tree, blossom, fern, moss, bird, beast or creeping thing could be called by name and its habits were learned as we come to know the peculiarities of our friends, by daily observation.

Their interest in the wild things of the wood was contagious, and not seldom did we find a large delegation from the school, with little heads crowded closely together, scanning some new plant or blossom which was the latest addition to the little garden. Slowly but surely it enlarged its borders. There were plots of every blossom that could be found. From the little hepatica, first herald of the spring, to the first flowers and asters of the fall, an endless procession of bright-faced flowers marched down the days. The bluebells, I remember, broke all bounds and ran, a rampant azure stream, across the orchard, following the course of a little waterway, taking the trail back to their native haunts. Some plants took kindly to cultivation, others did not; but with what painstaking care were replaced any which failed to respond to rollcall in the spring?

What rejoicing over new finds! What comparisons to decide varieties! What long woodland tramps were taken in search of some shy thing of which they had heard, but never found! What ransacking of all botanical lore at hand to learn its habits of growth and under what conditions it might naturally be found! And what joy and pride and abiding satisfaction they took—those precious boys—in the little plot of ground granted them, no pen of mine can tell.

And the fame of that garden went abroad. It was much prized and resorted to by teachers of botany, who marshaled their classes thither, and notebooks and herbariums grew plethoric with ease and celerity for the very complete collection of native plants gathered to hand. Herbists sought its borders and never went empty-handed away; and more than one noted naturalist was fain to find some wilding there which had eluded vision elsewhere.

Ah, well-a-day, time flies! The little gardeners are grown men now, and—strange irony of fate—each is taking his active part in the business life of the two rival cities of the west, Chicago and St. Louis; but still I can see their rosy cheeks and laughing eyes as in the long ago, basket-a-swing between them, they trudge up the path at sunset, eagerly recounting the treasures they have found; and still, though years have passed, many a shy blossom peeps out from the tangle of woody things which remain, and the bluebells run an azure stream all the way to the woods to tell of what was once the little wild flower garden.

DART FAIRTHORNE.

* *

THE TENT CATERPILLARS.

The Tent caterpillars are very abundant in many parts of the State the present season. In response, to a request by the Commissioner of Agriculture, at Albany, for suggestions for controlling the Forest Caterpillar, Prof. M. V. Slingerland, of Cornell University Experiment Station, has prepared an Emergency Report, which is Bulletin No. 70, and may be had by applying for the same at the University Station, Ithaca N. Y. The Bulletin is finely illustrated,

showing both the moths and the caterpillar in their different states. The information contained in the Report is of general interest, and the most essential portions of it are here reproduced:

THE APPLE-TREE TENT CATERPILLAR.

Many are familiar with the common apple tent caterpillar, its work, and especially its large silken tent which a colony of the caterpillars spin and use as a nest or home. These tent caterpillar nests have been altogether too conspicuous objects in the nearby landscape in most parts of our State during the past two years. It is the work of only a few moments to wipe out with a rag, or burn out one of these tents with its writhing mass of worms. The sooner this operation is performed after the nest is begun, the easier and more effectual it will be. Wild cherry trees along roadsides should be destroyed, for they are a favorite breeding-place for the apple tent caterpillars, fall web worms, and other injurious insects. Our orchardists should learn to familiarize themselves with the egg-masses of the apple tent caterpillar, for one of the easiest and most effectual methods of controlling the pest is to collect and burn these egg-masses at any time between August and the following April. The egg-mass is very similar to, but a little larger than that of the forest tent caterpillar. Pay the boys and girls a few cents for each score or hundred of the egg-masses they collect; you will be doubly repaid when spring opens by a decided scarcity of caterpillar nests to wipe or burn out. Those who spray their orchards thoroughly with Bordeaux mixture, to which Paris green or some similar poison has been added at the rate of one pound to 150 gallons of the Bordeaux, report little trouble in controlling apple tent caterpillars by this method alone. Caterpillar nests are usually a scarce article in orchards which have had three thorough applications of the above spray. The first application should be made just before the blossoming period, when the caterpillars are small and require but little poison to kill them; the second spraying should follow as soon as the blossoms have fallen, and a third application is usually necessary and advisable about a week or ten days after the second. Unless canker-worms occur in extraordinary numbers in an orchard, not many of them will live through the three applications above specified, if they are thoroughly made, and the same statements will apply to the forest tent caterpillar.

THE LIFE-STORY OF THE TENT CATERPILLARS.

In order to combat an insect pest the most effectively, one should know its life-story. This story of the lives of the apple and forest tent caterpillars may be briefly told. These two tent caterpillars are distinct kinds of insects, but are very nearly related to each other and each has practically the same general life-history, differing only in some details of habits. The story of the apple-tree tent caterpillar, *Cistiocampa americana*, has been interestingly told in the Teacher's Leaflet No. 5, which anyone can get free by applying to the Bureau of Nature-Study, College of Agriculture, Ithaca, N. Y.

At the date of writing (last week in May) the forest tent caterpillars, *Cistiocampa distria*, are nearly full grown. In about two weeks, or early in June, the caterpillars will be seen wandering about seeking a suitable place to undergo their wonderful transformations. They may select a leaf on or under the tree on which they fed, or some angle in your house or fence-rail may afford a more suitable place. Here the caterpillar will begin to spin about itself a white shroud or cocoon, composed of silken threads, in which are mixed the hair from its own body, and the whole is given a powdery appearance by the caterpillar ejecting a liquid which becomes a yellowish powder upon drying.

Within this cocoon the caterpillar soon changes to the curious brown object,—a pupa. In about ten days or two weeks after the cocoon is spun, or during the latter part of June, there emerges from it the adult insect—a buff-brown colored moth marked with a slightly darker band across each front wing. The moths fly mostly at night and are often attracted to lights.

Soon after emerging, the female moths deposit their eggs in masses of about 200 each around the smaller twigs. The eggs are covered with a varnish-like substance. The eggs thus deposited early in July will remain unhatched until the following April. Thus there is but one brood of the caterpillars in a year.

A very important difference in habit between the forest and the apple tent caterpillar should here be emphasized. It is this: A colony or family of forest tent caterpillars hatching from the same egg-cluster, like their near relatives, work and live together dur-

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ing most of their life, *but they never make any tent or nest*. The only approach to a web made by the forest tent caterpillars is a thin carpet spun on the bark or sometimes over several terminal leaves on which the whole family usually rest in a cluster during the day or when they are shedding their skins.

METHODS OF COMBATING THE FOREST TENT CATERPILLAR.

Fortunately both the apple and the forest tent caterpillars are preyed upon by many enemies, including insects, spiders, toads and birds. Where the forest tent caterpillars confine their work to their native haunts—the forest trees—we must depend largely upon these natural enemies to hold the insect in check.

Where the forest tent caterpillars are present in alarming numbers in fruit or shade trees, however, the case is very different, and man should take prompt measures to check their ravages. In orchards the method of gathering the egg clusters and spraying with Bordeaux, and Paris green will usually control the forest tent caterpillars. The presence of these caterpillars is not so readily discovered because they erect no tent or "signboard" in the tree as does the apple tent caterpillar. The two kinds of caterpillars often occur in the same tree.

The control of the forest tent caterpillar on village shade trees is a special problem, but not a difficult one, we believe. Enlist the aid of the school teachers, and the school children will soon become an invaluable army to help in protecting the trees. Let a few public-spirited citizens or the village Board offer a prize to those pupils who collect over a certain number, say 1,000 or 10,000 of the unhatched egg-clusters at any time between August 1st and April 1st of the following year; or pay the children a certain sum, a few cents for every hundred unhatched egg-clusters collected. All egg-clusters collected should be burned. The rivalry between the children will soon spread to rivalry between schools and the result will be that the number of the caterpillars will be reduced to the minimum by a single season's crusade of the children; and what may be of more value still is the fact that the teachers, children, and many citizens will get lots of fun out of the warfare and all cannot help but learn a very instructive lesson in Mother Nature's ways.

The above suggestion is not a theory, for just such a crusade has been successfully carried out even in so large a city as Rochester, N. Y. We believe there is no cheaper and more instructive method of controlling these forest tent caterpillars in village shade trees. Begin the warfare in August or September, 1899, or better, after the leaves have fallen so that the eggs can be more easily seen on the twigs, and keep it up until the last egg-cluster is burned before April 1st, 1900. Let the beautiful and valuable shade trees begin the new century free from the devastating caterpillars.

THE ECONOMIC VALUE OF SHELTER BELTS.

The economic value of shelter belts, who can comprehend it and in what terms shall it be expressed? In dollars it cannot be, and, fortunately, does not need to be, to be consistent with the subject given me for brief discussion. "Economy" or "economical" does not always imply a consideration of money. To be well and wisely ordered, to get the best and the most out of a given condition or situation is economy in its truest and highest sense. The things most precious to us, that contribute most liberally to all that makes life most worth the living, have a value too high and holy to be expressed in those base and sordid things that we call dollars. We lay down life for those we love, offer ourselves as bloody sacrifices upon our country's altar, wear the martyr's crown as the price of our devotion to principles; but who will attempt to state the money value of the love, the life, the devotion, the blood or the crown?

One builds a house with a view to excluding cold, which is designed to save fuel, but the saving of the cost of fuel is an infinitesimal part of the real economic value of the warmly built house. There is the comfort, the exemption from colds, from disease, from the possible death of some precious little member of the

family circle. From this standpoint where will be found the hardihood to declare that the advantages from constructing that dwelling so carefully and wisely can be computed in dollars and cents? There will be found none to deny that the greatest economic value of the construction is in the things that cannot be expressed in money.

An ample, properly located windbreak is grown around the house, its protecting arms embracing the dwelling, the barns the stables and the sheds. There will, perchance, come to view the scene some pedantic scientist, with mind and inclination attuned for statistics and mathematical calculations, and he will proceed to estimate the money value of the windbreak by demonstrating the saving of food to animals and of fuel to the dwelling, consequent upon the lessened degree of temperature in and around the buildings because of the neighboring trees. The scientist will be right; the saving he computes and asserts is realized, but what an immeasurable distance he is from expressing the real economic value of that windbreak!

When the polar legions of Boreas come charging across the prairies, up the valleys or over the hills; when he comes with his cavalry of the winds and infantry of snow, each soldier armored in ice and exhaling breath that makes the mercury hide its diminished head, he finds the home intrenched within ramparts against which his apparently invincible hosts hurl themselves only to be broken into impotent fragments, robbed of their power and disarmed of their terror, by the swaying, elastic but resolute and valiant "home guard" of trees. In the light of such an attack and such a victory, who will attempt to put a money value upon the services of those splendid defenders of our homes?—S. M. Owen, in *Minnesota Horticulturist*.

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